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in Economics and
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No. 199902

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March, 1999

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HUMAN CAPITAL IMPROVEMENT: THE KEY FOR THE SUCCESS OF ECONOMIC DEVELOPMENT

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Abstract

The economic crisis engulfing many Less Developed Countries (LDC's) has focused attention on the fragility of their financial sector. But longer-term need of many LDC's economies is to boost technological capability. While the physical capital is no longer the main problem for most of them, they need to improve their human capital by giving them appropriate skill and knowledge through educational improvement policy. This paper proposes strategies to improve the human capital by adding World Bank suggestion to enhance the information sector, which is crucial to effective market.

Introduction

At the present time, we have seen that in most Less Developed Countries (LDC's), especially in Asia, the infrastructure is no longer the main problem for them developing their country. Electricity, highway, railroad, communication are already built, and they almost have no difficulty in financing the investment (most of them have open economy policy that allows the foreign direct investment).

In other words, many LDC's have sufficient level of physical capital. Furthermore it is obvious can be seen that many LDC'S are rich in natural resources. However the question is whether possessing material resources is sufficient for development of these nations?. Even though the open economy policy has been applied for many years, current views suggest that it is not enough. A number of Asia's fast growing economies such as Thailand, Malaysia, Indonesia and South Korea are now struggling with collapsing currencies and domestic asset markets, widespread bank failures, bankruptcies of firms, and plunging stock market. Their economic growth now seems to be slowing down; they are facing an economic crisis. Most economists such as Krugman (1998), believe that the crisis began with the fragility of the financial sectors. Nobody disputes that, but even if that problem can be solved immediately for a short term, would it be the end of the crisis?.

Asian Development Bank (ADB) report (April 1998) states that to overcome the crisis, for the longer term, need of those economies is to boost technological capability. Chairman of one large leading company group in Thailand underlines it with his comments that :
"*Those companies that have invested in new technology and training are the ones getting ahead, most of the others will not survive*".[1]
It is well known that almost all of Asia's fast growing economies that are now struggling with the economic crisis had prospered through export-led strategies based on intensive use of cheap and relatively skilled labor. However the golden era of these countries' comparative advantage in labor-intensive products has been eroded as countries like Bangladesh, Sri Lanka, India, The People Republic of China and Vietnam can now make many similar products cheaply. Asian Development Outlook (ADO) 1998 adds a comment:
"… the era of rapid growth through the pursuit of traditional. Labor-intensive, low value-added production and exports may be over"

ADO (1998) argues that there is an urgent need for improving human resources through higher education in middle-income Asian developing countries. This will help enhance their ability to generate and manage new technologies that are appropriate to their needs.

[1] Asiaweek, biweekly magazine *July*, 1997

For the lowest income developing countries, investment in primary education are needed. It also argues that making appropriate investments in people's health is important in raising the human resource capabilities of Asian developing countries.[2]

Without qualified human resources, Asian developing countries cannot take the benefits of having good and fresh infrastructure they have to compete in future economic development growth. They would be just minor players in free trade that will begin globally in the next millenium. Asia Free trade Area (AFTA) and Asia-Pacific Economic Cooperation (APEC) for instances will begin in the early 2000.

The main purpose of this paper is to suggest the strategies in developing human capital of LDC's especially Asian countries with education and knowledge as basic points. This paper is organized as follows: Section II describes the relationship between Human Resource, Economic Growth, Technology and Education; Section III reviews the educational policies that had been taken by LDC's to boost the economic development between 1960's and 1970's; Section IV reviews the failure of LDC's educational policies; Section V discusses the educational policy options to be taken in this paper issue; and the last section will be conclusions.

Section II

Most economists argue that human resources ultimately determine the character and pace of economic and social development. Boeke (1953), McLelland (1962) for example, underlined human resources as the engine of development[3]. Human resources are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations, and carry forward national development. Impressive statistics and numerous quantitative studies of the sources of economic growth in the west demonstrated that it was not the growth of physical but rather of human capital (the residuals in econometrics production function estimates) that was the principal source of economic progress in developed nations. Clearly, in the LDC'S there is an immediate

[2] It is well known that Human Development Achievement is measured basically by three fundamental dimensions which are: (i) a long and healthy life; (ii) knowledge or educational; and (iii) a decent standard of living

[3] A.J. Kondonnasis, *Economic Development & Economic Integration: Old & New Lessons, 1990*

need to build up human as well as the physical capital infrastructure, in order to provide indigenous leadership for the major tasks of development. Refer to the microeconomics theory, we know about the concept of Cobb-Douglas production function that explains how physical capital, human resources and technological factors altogether determine the growth of an economy.

Mathematically, the Cobb-Douglas production function is:

$$Q = A(t)\, f[K,L]$$

Where K = Physical capital, L = Human resources (labor) and $A(t)$ = technological change factors. The technological progress has the effect of shifting the production function. Over time, more output can be obtained from any given combinations of production input.

Keeping the issue discussed in this paper, we only look at the way technological factor enters the production function, and by its effect on the quality of human resources that enter into the production function. We call this last one as a labor augmenting technological progress:

$$Q = f[K, A(t)L]$$

E.F. Denison (1962) in his empirical study of the U.S. economy[4] concludes that a substantial part of the technological advance could be explained by improvements in the quality of the labor force in skill and knowledge. This result indicated the strong role that education has in the growth process. Since Denison's work, numerous empirical studies have attempted to better explain the relationship between education and economic growth.

Of course in this approach A(t) work one way only, it assumes that the productivity of labor is "augmented" over time. This is due to labors learning to do their jobs better. However, along with the progress of econometrics methods, it is also possible to explain how labor's quality progress affects the progress of technological factor.

Cases of German and Japanese economic development after War World II also show how the important role of human resources quality and technological factors determine their success. They only needed a short time to be revived after their loss in WW II. In fact they are still able to economically outgrow the countries that won the war.

[4] E.F. Denison, *The Source of Economic Growth in the United States and the Alternative Before Us*, New York: Committee for Economic Development, 1962

Until recently, few politicians, statesmen, economists, and educational planners inside or outside LDC's believe that education is important to build the qualified human resources along with technological ability as main development agent. They believe that the expansion of educational opportunities at all level has contributed to aggregate economic growth by[5]:

1. Creating a more productive labor force and endowing it with increased knowledge and skills.
2. Providing widespread employment and income-earning opportunities.
3. Creating a class of educated leader to fill strategic vacancies in governmental services, public corporations, private businesses, and professions.
4. Accelerating the flow of information essential for effective market in the nation.
5. Providing the kind of training and education that would promote literacy and skill while encouraging "modern" attitudes on the part of diverse segments of the population.

Section III

The principal institutional mechanism for developing human skill and knowledge is the formal education system. Most LDC's have been led to believe or have wanted to believe that the rapid quantitative expansion of educational opportunities is the key to national development. The expectation of this mechanism is ability to absorb the knowledge, for example, ensuring the universal basic education with special emphasis on extending education to girls and other traditionally disadvantageous groups; creating opportunities for lifelong learning; and supporting tertiary education. As a result, there had been a tremendous acceleration in LDC's public expenditures on education during the last three decades. The proportion of national income and of national budgets spent on education has increased rapidly. In Asia, total public expenditures tripled during the 1960's and 1970's. Between 1960's and 1990's, the total number of persons enrolled in the three main levels of education (primary, secondary and tertiary) in LDC's increases 5% annually. World Bank (1990) reports the percentage of LDC'S adults (persons 15 years or older) who are illiterate has fallen from 60% in 1960 to only 36% in 1990.

[5] Todaro P. Michael, *Economic Development*, , 6th edition, Addison-Wesley Pub.Co, New York, 1996, p. 291- 292

Section IV

The challenge for human resource development is now gathering momentum. After more than three decades of rapidly expanding enrollment and hundreds of billions of dollar of educational expenditure, the plight of the average citizen in many LDC's seems little improved.

Absolute poverty is chronic and pervasive, economic disparity between rich and poor widens with each passing year, World Bank Report (1996) shows that about a third of people in half of the 78 LDC's suffer human poverty. Todaro (1996) says that, contrary to what might have been assumed. The educational systems of many developing nations sometime act to increase rather than to decrease income inequalities. The basic reason for this perverse effect of formal education on income distribution is the old main objective of development, which is only focused on how to maximize the aggregate level of output.

The unemployment problem still cannot be solved. This problem is closely related to the problem in income distribution. Todaro (1996) also shows that people without regular employment or natural unemployed are among the very poor income, while the others who have regular employment in the public and private sectors typically belong to the middle- and upper-income groups. In spite of the reality that not all people who are unemployed or without regular employment are poor, it still remains true that one of the major mechanism for reducing poverty and inequality in LDC's is the provision of productive employment opportunities for the very poor.

Although public expenditure on education increased in 1960's and 1970's, developing nations nevertheless were spending only $229 per capita on public education, compared to $468 per capita spent in the developed world. Moreover, declining economic growth combined with rising debt burdens and pressures to reduce government spending forced most LDC'S in the 1980's and early 1990's to curtail their education (as well as health and social services) budget.

Earlier it has been mentioned that the number of students enrolled has been increasing at about 5% per year. However this can be very misleading. That statistical result only tells us the proportion of school-age children and teenagers enrolled in primary, secondary, and tertiary education at a single point of time. They do not tell us how many of these students remain in school for the duration. In fact, one of the major educational problems of developing nations is the high percentage of students who drop out before completing a particular cycle. The average dropout rate among LDC's in primary school is as high as 50%, secondary school is 28.35% on the average.

Yet, the ADO (1998) notes enrollment rates in higher education in some of Southeast Asian economies are lower than expected, given their levels of development. The proportion of students enrolled in such fields at the tertiary level in Southeast Asia's high growth economies is a little more than half of that South Korea and is, in fact, comparable to that of the low-income South Asian economies such as Bangladesh and India.

Education policies also seem to be an important factor influencing rural-urban migration. Todaro (1996) shows that there is a relationship between the educational attainment of an individual and his or her propensity to migrate form rural to urban areas. In a comprehensive study of migration in Tanzania by Barnum and Sabot, the relationship between education and migration was clearly documented, especially in terms of the impact of declining urban employment opportunities on the educational characteristics of migrants. Those rural people with secondary to tertiary school education who migrate to urban areas, probably will not find any trouble in getting a job, but those with only a primary school education will find that it is difficult to get a job, moreover they will cause another new problem in economic development, such as urban poverty, urban slum, crimes, and etc.

Another evidence of the educational policy failures is the slow technological transfer from FDI to host countries with low educated people. Most FDI still prefers to hire expatriates for the strategic and high-tech related occupancies rather than hire local workers for it.
There is also lack of information problem came out. One example is the facts that knowledge and skill people get from education expansion did not meet with the needs of industry and market. It is also well known that in most LDC's people face difficulties to get credit for their business. Furthermore there is no suitable incentives for effort, innovation and so on.

Section V

Due to the failures of educational policies that had been experienced in the past, and also considering the fact that economies have been changed for many decades, developing nations are confronted with two basic alternatives in their policy approaches to problems of education. First they automatically can continue to expand formal system at the fastest possible pace with perhaps some minor modifications in curricula, teaching methods, and examinations and undertake some major improvement in acquiring modern laboratories and/or offer salaries that attract qualified teachers and keep them motivated, while retaining the same institutional labor market structures and economic development strategies. Or, second they can attempt to reform the overall educational system by modifying the conditions of demand for and the supply of educational opportunities and

by reorienting curricula in accordance with the real resource needs of the nations, of course they also have to modify the economic development strategies as a strong basis.

In section IV our evidence lead to the conclusion that the first alternative is likely to exacerbate the problems of poverty, inequality, unemployment, and rural stagnation that now define the actual conditions of many LDC'S, and that the second alternative should therefore be pursued further.

According to Todaro (1996) the educational systems largely reflect and reproduce rather than alter the economic, politic and social structures of the societies in which they exist, any program or set of policies designed to make education more relevant for development needs must operate simultaneously on two levels:

1. Modifying the economic, politic and social signals and incentives *outside* the educational system that largely determine the magnitude, structure, and orientation of the aggregate private demand for education.
2. Modifying the *internal* effectiveness and equity of educational systems through appropriate change in course content, methods of selection and promotion, and procedures for occupational certification by educational level

Only by policies designed simultaneously to achieve these two objectives can the real positive links between education and development is successfully forged.

Following are the external and internal policies suggested to improve the human resource through the educational system:

External Policies:

- *Enhancing the Standards of Living*.

Becker (1965) says that the human resource can not be classified as good if they do not suit the criterions of good education, good health conditions, and good nutrition. The goals of improvement of human resources can not be achieved if other factors such as health conditions and food/nutrition are not provided. Moreover he suggests that the population growth should also be controlled. World Development (1998) proposes to also look at the problem of human development in information factor such as enhancing the access of communication and telecommunication.

- *Adjusting Imbalances, Signals, and Incentives*

Policies that tend to remedy major economic imbalances and incentive distortions, and alleviate social and political constraints on upward mobility, such as shifting the orientation of economic development from maximizing output growth to income distribution, enhancing democracy, and gender equality can have the multiple effect of increasing job opportunities, slowing the rate of urbanization and facilitating development-related modifications of the educational system.

- *Changing The Export-Led Strategy*

LDC'S should now to move up the ladder of comparative advantage by producing export goods based on higher value added activities such as design and development, and by marketing of new and improved products.

- *Developing Appropriate Technologies by Investing in Research and Development (R&D) Activities.*

ADB reports that among Asia's developing countries, only South Korea, Singapore, and Taiwan spend more than one percent of their gross national product (GNP) on R&D, the rest spend less than one percent. Low investment in R&D results from the fact that it is often cheaper to purchase technology from abroad than to develop it locally (even the technology is old). Also, private firms often find their competitors gain easy access to the new technology developed by them, due to the loose copyright regulations. LDC'S must be encourage to strengthen the institutional structure and industrial technology capabilities of industrial R&D institutes; assist the R&D institutes to become more autonomous and self-reliant; improve their linkages with and responsiveness to the needs of industry, especially small and medium-scale industries; help the R&D institutes attain accreditation and certification capabilities and, in particular, to achieve the capability of certification (copyright) conforming the international standards. Technology licensing plays a growing rule in developing countries' efforts to acquire knowledge.

- *Improving the policy and business environments,*

This strategy is very important, especially for export trade. To compete in the global marketplace, firms must meet international benchmark for efficiency and design. As a result, exporters tend o invest more in knowledge than firms that do not export.

- *Ensuring two-way information flows*

It seems that so far we only focused on ways to facilitate the flow of knowledge from those who have much of it to those who have less; from government to citizens; form teachers to students. But effective communication must be a two way street. Sharing knowledge with the poor requires an understanding of their needs and concerns-and earning their trust.

- *Control the International Employment's Migration*

Controlling or taxing the international migration of indigenously trained high-level professionals is a very sensitive subject. It can potentially infringe on the basic human rights that is the freedom to choose the nature and location of one's existence. However, for LDC's that has opened its economy by inviting foreign domestic investments (FDI's), this policy could be helpful to force FDI's to provide the technical and management training for local employees to take over the vacancies left by departing expatriates. Furthermore the indirect effect of this policy is that technological transfer could be achieved. Its implementation, however would require the cooperation and assistance of the governments of the countries to which these professionals migrate, and those of the origin of FDI's.

Internal Policies

- *Educational Budgets*

Where politically feasible, educational budgets should grow faster than in the past and should be allocated to primary and tertiary educational level to permit more revenue to be used for the creation of rural and urban employment opportunities and to promote self-education and rural work related learning experiences in later life. Government should consider supporting expanded adult education and training. In many cases the most cost-effective way of doing so is to support the private sector's activities in this area, for instance by establishing standards and accreditation procedures, and in some cases by providing subsidies, especially for the poor.

- *Re-orientation of Higher Education*

ADO (1997) notes that the LDC's must have a 'sufficient' orientation of higher education toward scientific, technical, engineering and other applied fields such as business and management as the high growth industries of the future, such as information technology and biotechnology, require an increasingly skilled labor force.

- *Enhancing The Partnerships Between Academic Institutions and The Private Sector*

According to the ADO, the policy that is applied in Asia's more successful technology-producing economies such as South Korea and Taiwan, is likely to be instructive for others.

Conclusion

It is evidently clear that the longer-term need of LDC's economies is to boost technological capability and informational accessibility. Moreover there is an urgent need for developing human resources through educational system improvement. The relationship between technology, human resources and economic growth can be explained briefly by microeconomic theory through the Cobb-Douglas production function.

The principal institutional mechanism for developing human capital (skill and knowledge) is the formal educational system. A tremendous acceleration in LDC public expenditures on education during the last three decades seems to be not too successful, because it creates new problems such as poverty, inequality, unemployment, high dropout rates, urbanization and etc.

Because educational systems largely reflect and reproduce than alter the economic, politic and social structures of the societies in which they exist, any program or set of policies designed to make education more relevant for LDC's needs must operate simultaneously on two levels: *external* and *internal* to the educational system.

The external and internal policies suggested in this paper to improve the human resource through the educational system are:

External Policies:

- Enhancing the Standards of Living.
- Adjusting Imbalances, Signals and Incentives
- Changing The Export-Led Strategy
- Developing New Technologies by Investing the Research and Development (R&D) Program.
- Improving the policy and business environments.
- Ensuring two-way information flows
- Controlling the International Employment's Migration

Internal Policies

- Educational Budgets
- Re-orientation of Higher Education
- Enhancing the Partnerships Between Academic Institutions and the Private Sector

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